

FIG. 1

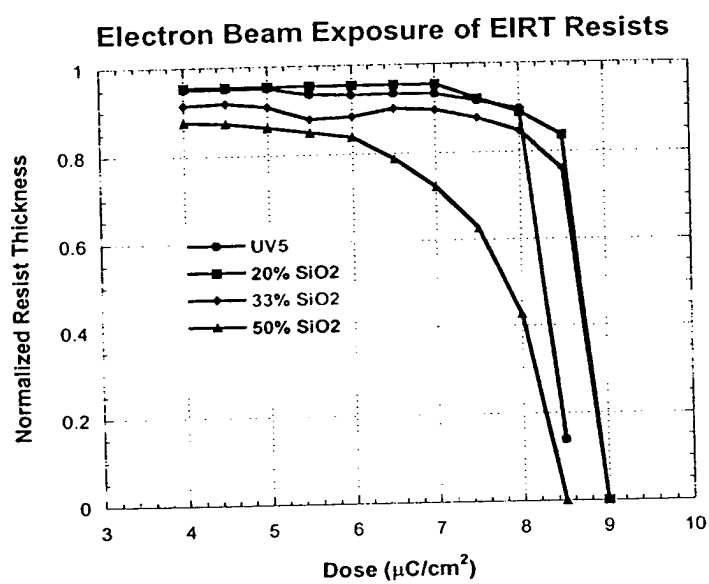
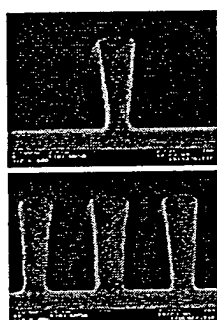


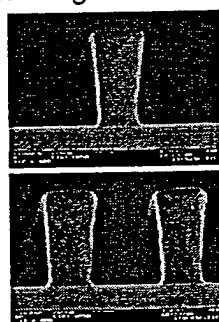
Figure 1. Comparison of contrast curves of EIRT resists and the commercial resist UV5 with electron beam exposure.

FIG. 2

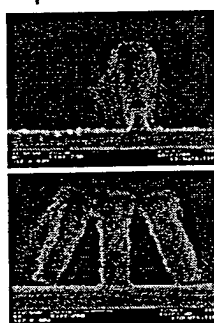
UV5 Resist Commercial Organic Resist



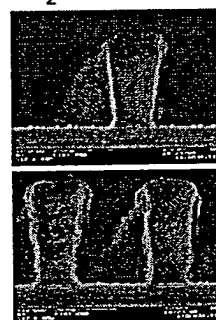
200 nm



300 nm

Experimental 20% SiO<sub>2</sub> EIRT Resist

200 nm



300 nm

Figure 2. Comparison of electron beam imaging of 200 and 300-nm dense and isolated lines of an EIRT resist and the commercial resist UV5.

FIG. 3

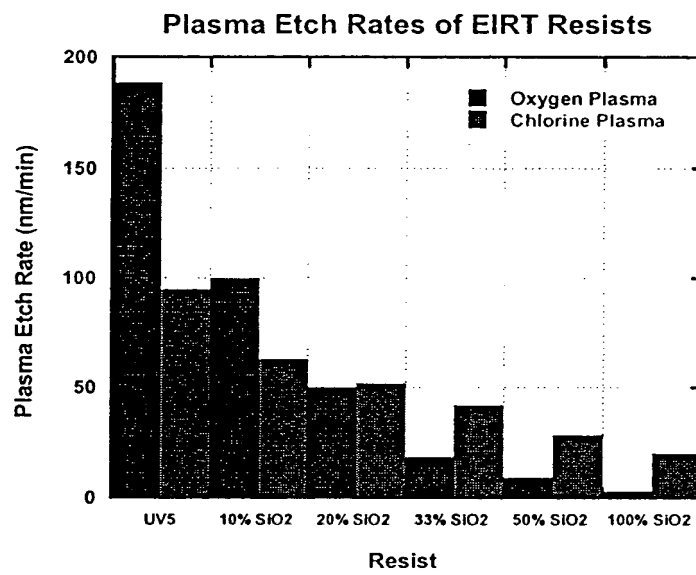


Figure 3. Comparison of RIE etch rates of resists containing increasing amounts of SiO<sub>2</sub> in both an oxygen and chlorine plasma.

FIG. 4

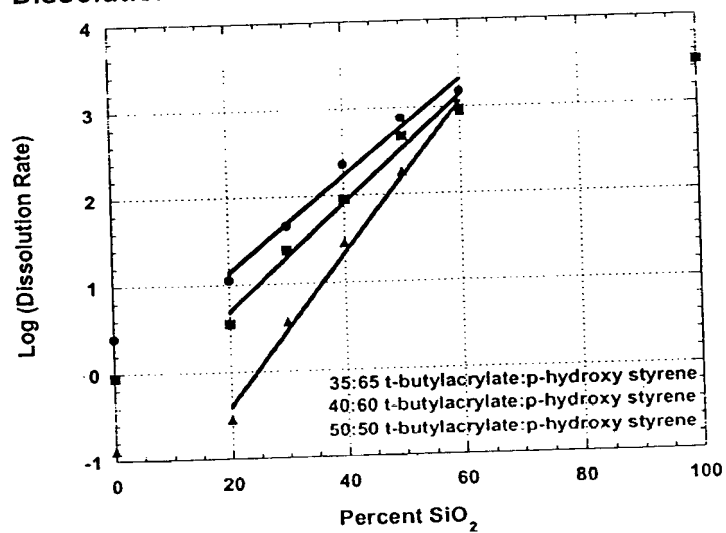
Dissolution Rate of ESCAP-polymer Encapsulated  $\text{SiO}_2$ 

Figure 4. Dissolution rates of three different polymers with varying levels of  $\text{SiO}_2$  incorporation.

FIG. 5

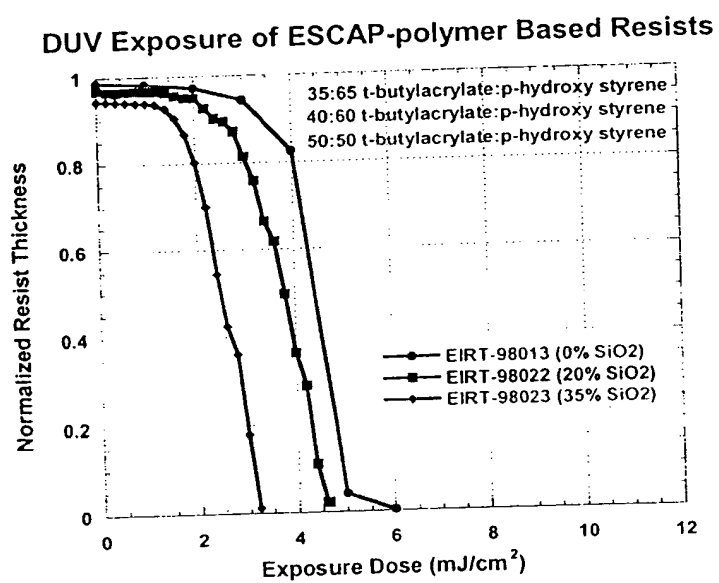
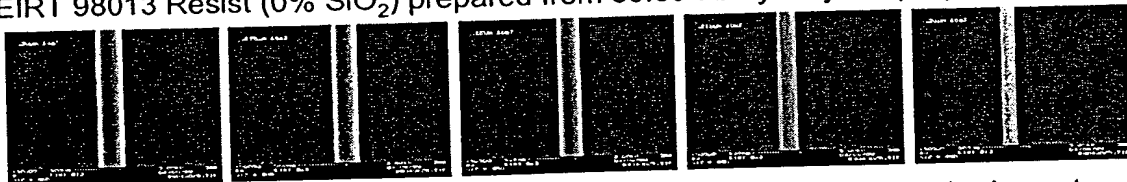


Figure 5. Comparison of contrast curves of three EIRT resists of improved formulation.

FIG. 6

EIRT 98013 Resist (0% SiO<sub>2</sub>) prepared from 35:65 t-butylacrylate:p-hydroxystyrene



EIRT 98022 Resist (20% SiO<sub>2</sub>) prepared from 40:60 t-butylacrylate:p-hydroxystyrene



300 nm

275 nm

250 nm

225 nm

200 nm

Figure 6. Comparison of 248-nm imaging (NA = 0.48) of isolated lines of a 20% SiO<sub>2</sub> containing EIRT resist and a resist containing no SiO<sub>2</sub>.